

TINGITIDÆ FROM AMBOINA ISLAND

(Hemiptera)

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The present paper is based upon a small collection of lace bugs from Amboina, Amboina Island, Molucca Islands, East Indies, presented to the California Academy of Sciences by the late F. Muir. This collection contains fifteen specimens, distributed among five genera and six species. Two genera and five species are described below as new to science. The types of all the new species are in the California Academy of Sciences.

DICONOCORIS JAVANUS Mayr

Diconocoris javanus Mayr, Verh. Zool.-Bot. Ges. Wien, 15:442, 1865.*Diconocoris javanus*, Drake, Lingnan Sci. Jour., 16:386, figs. 1, a and b, 1937.

One male specimen from Amboina agrees pretty well with the original description and also with the type as figured by Drake. It is a very large and striking species of a brownish black color. The costal area of the elytra is rather broad with the nervures dark brown to dark fuscous and most of the heavy transverse nervures black; some of the areolæ along the inner margins are clouded with brown to fuscous, the others hyaline. The legs are slender, testaceous, the tarsi brown.

Cystechila aspera Drake and Poor, new species

Brown, the elytra with indication of median band and a transverse spot a little before apex, fuscous. *Head* with five rather short spines, the median longest and directed downward, the hind pair appressed. *Rostral channel* deep, not very wide, the rostrum brown, extending a little beyond mesosternum. *Antennæ* moderately long, indistinctly pilose, brown; segment I short, much stouter but not much longer than II; III very slender, almost three times as long as IV, the latter fusiform. *Legs* brown, rather slender and fairly short. *Pronotum* tricarinate, the strongly developed paranota sharply reflexed and meeting above disc so as to conceal all the dorsal surface save hood and triangular process; hood small, the front margin faintly produced; paranota very large, extending considerably above disc of pronotum, with strongly developed, bulbous, lateral humeral projections; lateral carinæ foliaceous, uniseriate, slightly converging posteriorly,

marginal veins thick; median carina more strongly raised, much higher on disc, there the paranota resting on it; triangular process areolate, the carinæ hairy. *Elytra* considerably longer than abdomen, the sides nearly parallel, strongly overlapping and jointly rounded behind when at rest; costal area moderately wide, biseriate, the areolæ moderately large; subcostal area a little wider, biseriate; discoidal area very long, wide, extending considerably beyond middle of elytra, pointed and slightly raised at apex, widest at middle, there six to seven areolæ deep, the inner boundary raised and obtusely angulate between middle and apex; sutural area large, more closely reticulated. *Genital segments* of male very broad. Hypocostal ridge biseriate at base, becoming uniseriate posteriorly. Length, 3.60 mm.; width, 1.37 mm.

Holotype, male, No. 5197, Calif. Acad. Sci., Ent., Amboina. The prominent lateral protuberances of humeri, the carinæ, paranota and broad male genital segments are distinguishing characters. The costal margins of the elytra are reflexed along the basal three-fifths.

Orotingis Drake and Poor, new genus

Pronotum convex, coarsely pitted, unicarinate; hood wanting; paranota not expanded or areolate, represented by a very narrow, carina-like ridge; collar present, truncate in front. *Head* short, without spines, the eyes large. *Antennæ* rather slender, segment I rather short, a little stouter and longer than II; III not much slenderer than other segments, scarcely longer than IV. *Bucculæ* short, open in front. *Rostral channel* very broad on meso- and metasternum, the laminæ low, rostrum rather long. Antenniferous tubercles inconspicuous. Orifice present. *Elytra* very broad, the outer marginal nervure strongly costate, costal and sutural areas widely reticulated, each distinctly defined; subcostal and costal areas more closely reticulated, the boundary between them not clearly defined, the pronotum and reticulation of elytra without vestiture.

Type of genus: *Orotingis muiri* Drake and Poor, n. sp.

This genus seems to be most closely allied to *Eteoneus* Distant, but is easily separated from it by the long fourth antennal segment. In *Eteoneus* the fourth antennal segment is much shorter and the areas of the elytra are sharply set off from each other.

Orotingis muiri Drake and Poor, new species

Head black, almost flat above, the eyes very large and blackish. *Antennæ* moderately stout, testaceous, indistinctly hairy; segment I moderately long, faintly embrowned at base, about one and one-

half times as long as II, the latter slenderer and rather long; III straight; IV very long, clothed with longer and more numerous hairs, faintly stouter, subequal in length to the preceding. *Rostrum* extending almost to base of mesosternum; channel widest on mesosternum, there with the sides concave within, slightly narrower and cordate on metasternum. *Pronotum* strongly convex, truncate in front, black, shiny, the pits very large; triangular process moderately large, somewhat brownish, the pits small, somewhat rounded at apex; median carina sharply raised, thick, non-areolate; paranota represented by an inconspicuous carina; collar cylindrical, not elevated. *Elytra* very broad, sharply widened at base, widest opposite apex of triangular process; costal area very broad, the outer nervure very thick, biseriate at base and in widest part, triseriate in transverse band, a small spot at base, a wide band in front of middle and apical portion dark fuscous (including areolæ), the rest pale testaceous with clear areolæ, the areolæ in widest part very large; discoidal and sutural areas dark fuscous, the nervures separating them not clearly defined, the areolæ of sutural area with centers pale and hyaline. *Legs* rather slender, pale testaceous. Length, 2.60 mm.; width, 1.65 mm.

Holotype, male, No. 5198, allotype, female, No. 5199, Calif. Acad. Sci., Ent., and one male and two female paratypes, Amboina, January, 1908.

In some specimens the third and fourth antennal segments are subequal in length. The discoidal area extends faintly beyond the middle of the elytra and is four areolæ deep in widest part.

Cottothucha Drake and Poor, new genus

Head short, without spines. Bucculæ contiguous in front. Orifice present. *Rostrum* moderately long; rostral channel very wide on metasternum, the laminae not meeting behind. Antennæ long, slender; segments I and II short, the latter shorter; III very long, slenderest; IV long, slightly thicker than III. Antenniferous tubercles not prominent, small. *Elytra* considerably longer than abdomen, divided into the usual areas, without inflations. Pronotal cyst extremely large, not divided, concealing base of head and most of pronotum, except small portion of lateral margins and tip of triangular process. Reticulations distinctly lacy.

Type of genus: *Cottothucha oceanæ* Drake and Poor, n. sp.

This genus differs from *Idiocysta* China in having a differently formed and undivided hood or cyst, no visible lateral carinae on triangular process and foliaceous paranota reflexed against the sides of the cysts. In *Idiocysta*, the paranota form the semi-globose hoods.

Xenotingis Drake and *Holophygdon* Kirkaldy have hoods of a different type and different derivation. *Alloithucha* Drake has widely expanded elytra with apices separated when at rest. The origin and structure of the pronotal hoods and cysts of the above genera and other genera need to be studied, but it is difficult to secure material in most of these genera for dissection and morphological studies.

Cottothucha oceanæ Drake and Poor, new species

Head short, black, almost flat; eyes large, blackish. *Rostrum* testaceous, extending to base of mesosternum. *Rostral channel* deep and parallel-sided on mesosternum, becoming very wide with the laminae flaring and more widely areolate on metasternum, the laminae not meeting at middle posteriorly. *Legs* slender, pale testaceous, the tarsi brownish. *Antennæ* long, slender, indistinctly pilose, pale testaceous; segment I not very long, stouter and twice the length of II; III very slender, straight; IV long, slightly thickened, seven-tenths the length of III. *Pronotum* black, almost totally concealed by the hood; hood extremely large, extending truncately over base of head as viewed dorsally, dark fuscous, with the veinlets darker, the median nervure a little more prominent than others, longer than high, strongly inflated, higher than wide; paranota strongly foliaceous, reflexed back against the sides of the hood, practically projecting vertically, biseriate, the areolæ large. *Elytra* rather narrow with subparallel sides, slightly constricted beyond middle, jointly rounded behind, dark fuscous, the widest part of costal and bordering portion of subcostal areas testaceous, there the areolæ hyaline; costal area reduced to a costate nervure along the basal portion, with five or six large areolæ distally (opposite apex of discoidal area); subcostal area narrow, uniseriate; discoidal area extending to middle of elytra and almost to end of abdomen, widest a little beyond middle, there four areolæ deep; sutural area large, the areolæ moderately large, some of them with pale centers. Hypocostal ridge uniseriate. Length, 3.00 mm.; width, 1.94 mm.

Holotype, male, No. 5200, allotype, female, No. 5201, Calif. Acad. Sci., Ent., and one male paratype, Amboina, November, 1907.

Stephanitis amboinæ Drake and Poor, new species

Large, broad, pale testaceous, some of the nervures embrowned. *Antennæ* long, slender, testaceous, shortly pilose; segment I moderately stout, long, narrowed distally to near the apex and then enlarged, five times the length of II, the latter short; III slender,

moderately long, nearly straight; IV very long, very slightly enlarged, three-fourths of the length of III, slightly embrowned. *Rostral channel* widening distally, the rostrum extending to middle of metasternum. *Head* concealed by hood, the spines whitish, rather short and directed forward. *Legs* slender, testaceous, the tips of tibiæ and tarsi embrowned. *Pronotum* dark brown, covered with a white exudation, slightly convex; hood very large, inflated, constricted in front of middle, extending considerably in front of head, about one and one-third times as long as high; median carina strongly foliaceous, nearly as high as hood, and a little shorter, the dorsal margin rounded; lateral carinæ short, not extending back onto triangular process nor forward beyond highest part of disc, high, each composed of two or three rectangular areolæ; triangular process narrow, membranous, reticulated; paranota large, reflexed, recurved in front and behind, the outer margin nearly straight and parallel, composed of several irregular rows of moderately large areolæ. Elytra with outer margin strongly sinuate, widened to beyond the middle, the tips somewhat narrower and widely separated; tumid elevation sharply raised, moderately large, impressed within, subcostal portion convex, discoidal area partially concave and merging with sutural area without distinct differentiation. Reticulation of paranota, hood, carina and elytra partly embrowned, the areolæ moderately large, the margins of elytra and paranota with short, fine hairs. Length, 4.18 mm.; width, 3.10 mm. at widest point of elytra.

Holotype, female, No. 5202, Calif. Acad. Sci., Ent., Amboina, November, 1907.

The short, high lateral carinæ and very strikingly shaped paranota and elytra are distinguishing characters. The crest of the tumid elevation is the boundary between discoidal and subcostal areas, the former occupying the inner portion; the boundary between discoidal and sutural areas is not definitely defined. It is not easily confused with its congeners from the East Indies.

Stephanitis astralis Drake and Poor, new species

Moderately large, pale testaceous, some of the veinlets embrowned, *Antennæ* long, slender, testaceous, shortly pilose; segment I moderately long, rather swollen at ends, not quite four times as long as II, the latter short; III very long, nearly straight, about two and three-fourths times as long as IV, IV moderately long, slightly enlarged. *Rostral channel* deep, widening distally, the laminæ testaceous; rostrum stout, testaceous, dark at apex, extending beyond middle of metasternum. *Legs* testaceous, the tips of tibiæ and tarsi embrowned. *Pronotum* brown, unicarinate, moderately convex, triangular portion narrow, membranous,

areolate; hood rather small, very narrow, extending forward slightly beyond apex of head and backward not as far as highest part of disc; median carina strongly foliaceous, long, a little higher than hood and more than twice as long when measured on dorsal edge, biseriate, the areolæ large; paranota wide, long, nearly rectangular in outline, reflexed, posterior margin curved inward, triseriate, the areolæ large. Elytra broad, the tips separated but not widely, the tumid elevation long, high, impressed within, extending barely beyond middle of elytra. Transverse veinlets of marginal row of areolæ, paranota and elytra embrowned, also a few of the other veinlets; areolæ hyaline, the discoidal area quadriseriate, evenly concave, occupying the inner slope of tumid elevation and truncate behind; subcostal area biseriate, almost vertical; sutural area biseriate at base, triseriate beyond. Length, 3.50 mm.; width, 2.10 mm.

Holotype, male, No. 5203, allotype, female, No. 5204, Calif. Acad. Sci., Ent., and two paratypes, Amboina, November, 1907.

The long median carina and long tumid elevation of elytra are distinguishing characters. The costal area of elytra is wide, triseriate to widest part, there the areolæ are a little smaller and five deep.

SOME ADDITIONAL INTERSEXES IN MEGACHILE*

(Hymenoptera, Megachilidæ)

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Since the publication⁴ several years ago of descriptions of a number of sexually anomalous specimens of leaf-cutter bees (*Megachile*), several additional specimens have been discovered and are herewith reported and described.

MEGACHILE (DELOMEGACHILE) VIDUA Smith, Intersex

The head and thorax of this specimen are entirely male in character, the antennæ being 13-segmented, the anterior tarsi broadly dilated, and all other secondary sex characters just as in a typical male. The more basal segments of the abdomen, also, seem to be more male in character, for the pubescence is entirely pale on the first three basal terga, whereas in females the second and third have conspicuous dark pubescence across the discs. The terminal segments are more definitely female, although the apical fasciæ are much narrower than in the female, and the sixth tergum is less broad, with finer puncturation. The venter of the

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